

Ch 13. Genetic Technology

Study Guide

Applied Genetics – Selective Breeding

1. _____ produces organisms with desired traits.
2. List three examples of organisms that have been selectively bred for and what their desired traits were:
 1. _____
 2. _____
 3. _____
3. Why is Inbreeding good (benefits)? _____

Why is inbreeding bad (draw back)? _____

4. A _____ is the offspring of parents that have different forms of a trait.

DNA Technology – Recombinant DNA, Cloning, Gel Electrophoresis, & DNA Fingerprinting

5. What are some examples of what you can do with DNA technology? _____

6. _____ is like selective breeding, but it is a much faster and a more reliable method for increasing the frequency of a specific allele in a population. It is when you direct manipulate genes for practical purposes.
7. Recombinant DNA is made by _____
_____.
8. _____ are molecules that cut DNA at specific sites. These sites are palindromes and are referred to as _____.
9. What is the difference between a blunt and sticky end? _____

10. HaeIII is a restriction enzyme that cuts at the restriction site GGCC, between the G and C. On the DNA samples below, draw a line to show where the restriction enzyme would cut.

CC CGGCCT TC GAATACGGCC TCC
GGGCCGGAAGC T TATGCCGGAGG

How many fragments do you have? _____

Does this product a blunt or sticky end? _____

11. What are transgenic organisms? _____

12. How would you transfer a gene from one organism to another? _____

13. What is a plasmid? _____

14. What are the five steps to cloning an organism?

1. _____

2. _____

3. _____

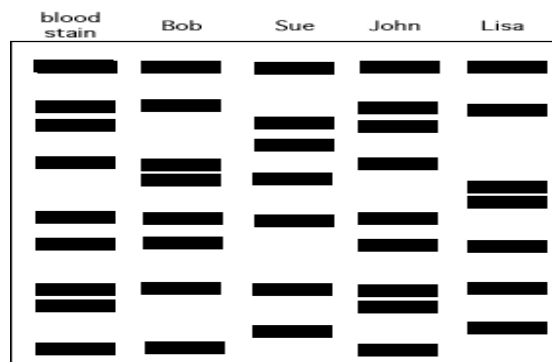
4. _____

5. _____

15. _____ is technology that separates molecules (like DNA) on the basis of size using _____ charge.

16. In the following Gel below,

- Circle the person (Bob, Sue, John, or Lisa) that matches the blood stain sample
- Where would the DNA be inserted into the gel? – the top or the bottom?
- Which DNA fragments are the longest – those towards the top or those towards the bottom?



17. If cutting DNA is done by restriction enzymes, and sorting DNA is done by gel electrophoresis, what is it called when you compare DNA like you did in question 15?

18. If someone approached you and told you that they think Genetically Modified foods are unnatural and bad for people, how would you respond and what points would you have to back up your argument? _____

